

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference P204-0396WO	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/JP2004/016898	International filing date (day/month/year) 08/11/2004	(Earliest) Priority Date (day/month/year) 11/11/2003
Applicant CANON KABUSHIKI KAISHA		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 5 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box II).

3. ☐ **Unity of invention is lacking** (see Box III).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 1

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

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Box No. IV Text of the abstract (Continuation of item 5 of the first sheet)

A printhead includes a plurality of switching elements (102) which are arranged in correspondence with respective printing elements (101) and control energization to the respective printing elements, a reference voltage circuit (105) which generates a reference voltage, a current generation circuit (104) which generates a reference current (I_{ref}) on the basis of a reference voltage (V_{ref}) generated by the reference voltage circuit, and a plurality of constant current sources (103) which supply, in accordance with the reference current (I_{ref}) generated by the current generation circuit, constant currents via the switching elements arranged in correspondence with the respective printing elements.

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 B41J2/05

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B41J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	PATENT ABSTRACTS OF JAPAN vol. 2000, no. 24, 11 May 2001 (2001-05-11) & JP 2001 191531 A (CANON INC), 17 July 2001 (2001-07-17) cited in the application abstract; figure 1	1, 4, 14
Y		2, 3, 5, 8, 10, 11, 15-17, 20, 22, 25, 26
A		6, 7, 12, 13, 18, 19, 23, 24
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

17 February 2005

Date of mailing of the international search report

08/03/2005

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Kulhanek, P

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 1 164 013 A (SONY CORPORATION) 19 December 2001 (2001-12-19)	3,8,10, 11,16, 20,22, 25,26
A	paragraphs '0123!, '0124!; figure 28 abstract	7,12,13, 19,24
Y	----- US 2003/038617 A1 (YAKLIN DANIEL A) 27 February 2003 (2003-02-27)	2,5,15, 17
A	paragraphs '0035! - '0039!; figure 6 -----	9,12,18, 21,23

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Information on patent family members

International Application No

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
JP 2001191531	A	17-07-2001	NONE	
EP 1164013	A	19-12-2001	EP 1164013 A1	19-12-2001
			WO 0153102 A1	26-07-2001
			US 2004212647 A1	28-10-2004
			US 2003117452 A1	26-06-2003
US 2003038617	A1	27-02-2003	NONE	